

CLAIMS:

1. ~~A drainage system grate assembly for covering a water~~
course of a drainage system, the drainage system assembly comprising:

a frame set within the watercourse;

a grate seated within the frame and including -

at least one tread bar for allowing a person or vehicle to traverse
over the watercourse,

at least one crossbar spanning the frame and supporting the tread
bars, and

a flange protruding from at least one crossbar; and

a locking element operable to be secured to the flange and contact the
frame in order to secure the grate within the frame.

2. The drainage system grate assembly as set forth in claim 1,
wherein the frame includes ledges for supporting the crossbars.

3. The drainage system grate assembly as set forth in claim 1,
wherein the frame includes shelves for engaging the locking element.

4. The drainage system grate assembly as set forth in claim 1,
wherein each crossbar includes at least one channel for supporting the tread bars
therein.

5. The drainage system grate assembly as set forth in claim 4,
wherein each crossbar includes a slot along its length of sufficient depth so as to
meet each channel and allow the tread bars to be secured to the crossbar by
welding a bead along the slot.

6. The drainage system grate assembly as set forth in claim 1,
wherein each crossbar includes a slanted side adjacent the flange.

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7. The drainage system grate assembly as set forth in claim 1, wherein the flange is substantially horizontal.

8. The drainage system grate assembly as set forth in claim 1, wherein each crossbar includes a slanted side adjacent a substantially vertical sidewall.

9. The drainage system grate assembly as set forth in claim 1, wherein the flange includes a hole operable to receive a bolt to secure the grate to the locking element.

10. The drainage system grate assembly as set forth in claim 1, wherein the locking element includes a substantially horizontal member and at least one substantially vertical member.

11. The drainage system grate assembly as set forth in claim 1, wherein the locking element is a flat bar for spanning the frame.

12. The drainage system grate assembly as set forth in claim 1, wherein the locking element includes a nut retainer.

13. A drainage system grate seated within a frame and spanning a watercourse of a drainage system, the grate comprising:

a plurality of tread bars for allowing a person or vehicle to traverse over the watercourse;

a plurality of crossbars spanning the frame and supporting the tread bars, wherein at least one crossbar further comprises at least one slanted side; and

a flange protruding from at least one crossbar for attaching a locking element thereto.

14. The grate as set forth in claim 13, wherein each crossbar further comprises a plurality of channels for supporting the tread bars therein.

15. The grate as set forth in claim 14, wherein each crossbar includes a slot in a bottom surface along its length of sufficient depth so as to meet each channel and allow the tread bars to be secured to the crossbar by welding a bead along the slot.

16. The grate as set forth in claim 13, wherein the flange includes a hole operable to receive a bolt to secure the grate to the frame.

17. The grate as set forth in claim 13, wherein the flange is substantially horizontal.

18. The grate as set forth in claim 13, wherein at least one crossbar further comprises two slanted sides.

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19. A crossbar of a drainage system grate for spanning a watercourse of a drainage system and supporting tread bars of the grate, the crossbar comprising:

- a substantially horizontal top surface;
- a plurality of channels in the top surface for supporting the tread bars therein;
- at least one slanted side adjacent the top surface;
- a substantially horizontal flange adjacent the slanted side;
- a substantially horizontal bottom surface for supporting the crossbar;
- a slot in the bottom surface along the length the crossbar of sufficient depth so as to meet each channel and allow the tread bars to be secured to the crossbar by welding a bead along the slot; and
- a hole in the flange operable to receive a bolt to secure the grate to the watercourse.

20. The crossbar as set forth in claim 19, further comprising two slanted sides.

